REPORT

ON THE

CHOLERA EPIDEMIC OF 1885 IN NEPAL;

WITH A SHORT DESCRIPTION OF THE TOPOGRAPHY AND INHABITANTS OF THE VALLEY.

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(*Communicated by the* SURGEON-GENERAL *with the* GOVERNOR-GENERAL *of India.*)

NEPAL Proper, the most important, but by far the smallest, district of the country, consists of a densely populated central valley, together with five smaller surrounding ones—Banepa, Duna Baisia, Kulpu Baisia, Nyakōt, Chitlong—usually considered with it, and to which, also, Europeans are admitted.

The outline of the central valley is irregularly oval. The long diameter running from N.W. to S.E. is about sixteen miles in length, and the shorter from twelve to fifteen miles; the inhabited area, including parts of the sides of the adjacent mountains, may be estimated at 300 square miles. Its elevation is 4,700 feet above sea-level. A circle of hills surrounds it on all sides; their elevation varies from 500 to 4,600 feet above the valley, and from 5,200 to 9,300 above the sea. These hills shut in the valley so closely on every side, that only one narrow outlet remains in the S.E. corner, through which the river Baglunati escapes in its course towards the plains; this river carries off the whole of the drainage of the valley, and the hills encircling it; it flows through the valley from N. to S.E., receives several tributaries in its course, and is joined by the Gishnumati at Kathmandu; the united streams form a broad river, which is partly dry during the hot weather, but swollen to a torrent in the rains.

The surface of the valley is divided into portions of two different levels, the higher called Sars, and the lower, through which the rivers flow, Baisiyas; there is often a considerable difference in the level of adjacent Sars and Baisiyas, as much as 80 to 100 feet. It is most densely populated, besides containing three cities, each formerly the capital of a separate kingdom; there are many towns or large villages, and a great number of smaller villages and hamlets; in addition, the open country is studded with isolated dwellings.

The population is estimated by the Nepalese at half a million, and is probably not far short of 400,000; estimating the area, as I have done, at 300 square miles, this gives the almost incredible number of 1,333 inhabitants to the square mile.

The climate of the valley is most temperate, much resembling that of the south of Europe, with the exception of its far greater humidity. The year has been well divided, by one of my predecessors, into the following seasons: spring, from March 1st to May 1st; summer, May 1st to June 15th; rains, June 15th to September 15th; autumn, September 15th to November 15th; and winter, November 15th to March 1st. During this last season, heavy morning fogs, lasting to 9 or 9.30 A.M., fill the valley; hoar frosts are frequent, and the thermometer sometimes falls, in December, to 27° at night.

A table is attached showing the average maximum, minimum, and mean temperatures for each month in the year, from which the average yearly mean appears to be 61°. During the hottest months, the highest temperature in the house, with doors and windows open, seldom goes above 82°, and punkahs are unnecessary. The average yearly rainfall, calculated from a series of twenty-four years, is 55.9 inches, three-fourths of which fall between June 1st and September 30th. A result of the situation of the valley is the irregularity in the direction of the wind. Observations, at any one point, cannot be taken as representing accurately the general direction over the whole area, currents rushing down the sides of the hills into the valley from every quarter. Through the spring and hot weather, the wind blows pretty steadily from the west; during the rains, the atmosphere remains remarkably calm; what wind there is, blows generally from the S. and and S.W.; during the rest of the year, most often from the N. and N.W. With the exception of the months from February to the middle of June, however, the wind is fitful and varying.

The soil is composed mainly of alluvial deposit, *débris* from the surrounding hills; sand is generally distributed through it, even where it is of the nature of clay, and lime is almost entirely absent. The valley is said, by tradition, to have been originally a lake, from which the water was drained by supernatural agency.

Average Temperature for each Month in the year from 1880 to 1884 inclusive.

	Maximum.	Minimum.	Mean.		Maximum.	Minimum.	Mean.
January	70.0	34.9	47.2	August	86.2	66.7	72.8
February	71.1	36.6	49.8	September	80.1	62.7	71.0
March	80.1	45.2	58.9	October	84.2	54.3	69.3
April	87.9	49.6	63.5	November	77.6	41.8	59.5
May	85.7	57.5	67.2	December	73.1	34.9	47.5
June	87.4	65.3	72.0				
July	88.2	66.8	72.7	Average	81.5	51.5	61.5

Average Temperature during 1885.

	Maximum.	Minimum.	Mean.		Maximum.	Minimum.	Mean.
January	73.2	37.3	47.7	May	88.1	54.2	65.5
February	72.5	33.9	46.9	June	91.7	64.6	73.6
March	84.8	44.2	59.1	July	90.6	67.7	73.9
April	89.1	50.4	64.3	August	90.0	65.9	72.1

The daily mean temperature has been calculated approximately from the mean of the minimum and the 4 P.M. reading.

Average Rainfall from 1880 to 1884 inclusive.

January ..	1.22	April ..	1.99	July ..	12.41	November ..	0.14
February ..	1.05	May ..	3.95	August ..	13.60	December ..	0.19
March ..	1.37	June ..	8.95	September ..	6.87		
				October ..	1.72	Total ..	53.46

Rainfall during 1885.

January ..	0.88	March ..	0.54	May ..	2.61	July ..	10.91
February ..	0.37	April ..	3.39	June ..	10.57	August ..	17.76
						September ..	8.40

Every available yard is under cultivation; but, to supply the need of so large a population, large quantities of grain are brought into the valley from the hills.

The inhabitants may be roughly divided into two classes: Newars, descendants of the original dwellers in the valley; and Parbatiyas, the descendants of their conquerors. The Newars are industrious and skilful agriculturists; the trade and handicrafts of the country are in their hands. They form a large majority in the towns of Kathmandu, Patan, and Bhatgaon, and, indeed, all over the valley. They are of mixed Thibetan and Indian origin, and, in appearance, of a Mongolian type, with flat features, and short sturdy frames. The Parbatiyas, a general term for hill Hindus, are much less devoted to agriculture or other peaceful pursuits; and the army is composed almost exclusively of them. They have many subdivisions: the true Gorkhali is a tall slightly made man, with Rajput features. The army is, besides, largely recruited from other hill-tribes, particularly from Magars and Gurungs.

Fifteen or sixteen thousand troops are stationed in the valley; this number includes almost the entire standing army; 11,000 are kept at Kathmandu, 2,000 at Patan, and 2,000 at Bhatgaon. During the cold and hot weather, the troops are assembled at head-quarters, and diligently drilled; just before the rains set in, they disperse to their houses on leave, 2,000 or 3,000 only remaining as a garrison. Both classes are, as a rule, well clothed and nourished, and comfortably housed. In the way of food, much more flesh is consumed by the bulk of the people than in the plains; the Parbatiyas eat goats, and the Newars buffaloes; the staple food consists of grain, such as rice, makai, millet, and vegetables, particularly garlic and radishes; the latter are eaten in a form called "sinki," which consists of the roots buried till almost putrid, and then dried. Another food, peculiar to the country, is "hakwa," prepared by allowing rice to partially ferment, and then drying it. Rakshi, a spirit distilled from rice, is largely used by Newars, Magars, and Gurungs, and by low castes of all tribes. The personal habits of the Nepalese are dirty in the extreme; the women appear to wash rather more than the men, and are very particular about dressing their hair.

As regards religion, the Parbatiyas, and about one-third of the Newars, are all Hindus; the remaining Newars professing Buddhism; the Buddhism is, however, much mixed with Hinduism, and caste distinctions obtain among all classes. Although somewhat lax in minor matters, there is no more bigoted Hindu than a Gorkhali; caste in Nepal is upheld by the law of the land, and breaches of its rules are punished severely. One difference between these rules in Nepal and those of Hindustan, consists in the fact that every Hindu, no matter what his caste, is free to drink water from the hand of any other Hindu, Newar or Bhutia; and it would be worse for him, should he refuse to do so without good reason—outcastes, such as Huhters, Dhobies, Chamars, Kosais, etc., are, of course, excepted.

Every stream, every glen, every wood in the country has its mythological story and presiding deity. The shrines in the valley are said to number 2,733, but the centre of all the sanctity is the Baghmati, on which the most sacred temples are built, as well as two of the three

large towns, and many villages; several extensive and well built stone ghats line its banks in different situations.

A most fixed article of faith is the supposition that a necessary condition for the salvation of the soul, is that it should pass away while the body is partially immersed in the sacred river; and it is a common and painful sight to see a dying man being hurried at top speed to its banks—a race with death in which the welfare of the spirit is more considered than physical suffering.

Kathmandu is built at the junction of the Baghmati with one of its largest tributaries. It is said to have been founded in A.D. 723, and, until comparatively recent days, was surrounded by a high wall, with thirty-two gateways; a few of these latter are still standing, but all traces of the wall have disappeared. The filth of the city is indescribable; along each side of the narrow lanes and streets run deep gutters, a foot to eighteen inches wide, filled with a stagnant mass of black stinking mud, into which fæcal matter and every sort of refuse find their way. The stench of the thoroughfares is at all times bad enough, but, on a warm morning in the rains, it becomes sickening. Adults of the lower classes resort to the fields around for purposes of nature, and the better off employ mehters to remove excreta from their houses; some of the refuse of the town also is carried away by Puriyas—a class whose savoury occupation it is to prepare manure; but a very considerable residue remains to perfume the air. The foundations of the city must be saturated with the filth of generations. The streets, most of them little more than lanes, are paved with brick or stone; in the city itself, the houses are two, three, or four stories high, and built of brick; the roofs are tiled, and have projecting eaves. In the suburbs, the houses become smaller, and the roofs are thatched. The general plan of the dwellings in the city is that of a square round a central courtyard, the condition of which is, at least, as filthy as that of the streets; the ground floor is generally occupied by domestic animals, buffaloes, goats, etc., who add their share to the general mess; the interiors of the houses are divided into small low rooms, the floors connected by step-ladders and narrow trap-doors; they are generally overcrowded and ill-ventilated.

The King's Palace stands at about the centre of the east quarter of the city. It is a rambling collection of buildings arranged in quadrangles, of which there are said to be forty, covering a considerable extent of ground.

The water-supply is partly from dharas, or springs, situated in different parts of the city; the palace contains two or three within its precincts; the mouths of these springs are, as a rule, below the level of the surface, and open into a clear square space, the floor and walls of which are paved and faced with stone flags, or brick; steps lead down to the water. Besides these springs, wells are largely depended on. Some people who live near its banks drink the water of the Baghmati; and a few of the more wealthy and pious have their drinking water brought from Baghduar, the source of the river, a distance of ten or twelve miles.

The dead are burned by the better classes, and help is given gratis by the Durbar to poorer caste Hindus, to enable them to dispose of their deceased relatives' remains in the orthodox manner, if they choose to avail themselves of it; but I believe they seldom take the trouble to make the necessary application, preferring, together with the outcaste classes, to content themselves by flinging the corpse into the nearest water-course, after first applying a torch to its lips. When there is little water in the rivers, the body is generally concealed from view by a few inches of sand; but dogs quickly disinter it, and the banks of the Tishnumati and Baghmati are, in some places near Kathmandu, strewed with the *débris* of human bodies in different stages of decomposition.

The population of Kathmandu is about 50,000, mostly Newars, one third of whom are Buddhists, and the rest Hindus.

The above remarks apply generally to the other two large towns, Patan and Bhatgaon. The former is older than Kathmandu; many of its houses are in ruins; and, although the town covers a larger area, the population is fewer, and the town far less prosperous. The bulk of the inhabitants are artisans and artificers, the majority of whom find work in Kathmandu and other places during the day, returning to their homes at night. Consequently, Patan presents a somewhat deserted appearance. The outskirts of the town are particularly filthy, littered with heaps of refuse, in which numbers of pigs wallow. The population is estimated at 30,000, the majority of whom are Buddhist Newars. The town is situated on the south bank of the Baghmati, nearly opposite Kathmandu, and only two miles distant from it.

The third large town, Bhatgaon, is about ten miles east of Kathmandu, at the foot of the hills bounding the valley in this direction, and is said to have been founded A.D. 865. It is reached by a good driving road. The town is built on high ground, and there is good drainage in one direction at least—towards the south side. It is rather cleaner than either Kathmandu or Patan, and presents a much more flourishing appearance than the latter. The population is estimated at 30,000, mostly Hindu Newars.

The Residency is situated on a piece of high ground, a mile to the north of Kathmandu. It is said that the site was originally assigned by the Durbar in 1816, as being the most undesirable spot to be found near the capital; barren, desolate, and haunted; the grounds are now about the most beautiful to be found in India, and thickly wooded. A high road from the hills to the north, leading to Kathmandu, runs through the Residency limits, and along it, during the day, there is a considerable amount of traffic; this road divides the Residency grounds from the lines of the escort, originally two companies of Sepoys, but for many years reduced to one. The lines are well situated, and, having been planned on a liberal scale for 200 men, afford very ample accommodation for less than 100; the huts are old, but in fairly good repair, and are divided into roomy compartments, three of which are allotted to every two men. Originally, the space intervening between the city and the lines was quite clear of houses, but, unfortunately, owing to the spread of the town in all directions, the clear space is being rapidly encroached upon by dwellings. The low land surrounding the Residency limits on the three other sides is, through the rains, under rice-cultivation, and partially submerged. The water-supply for the lines is from a spring just outside the boundary, reserved for the use of the Sepoys, and well under control.

The prevailing diseases in the valley are, fever, typhoid in character, but whether true typhoid or not I have not as yet had opportunities of determining; it occurs chiefly in the towns and large villages. Syphilis is extremely common; it is, in fact, rather the rule than the exception for a man to be infected at some period of his life; I have, however, seen few severe cases. Goître is a most prevalent disease; so is, also, chronic dyspepsia, resulting from a diet of coarse grain and vegetables. Malarial fever does not occur, except among individuals who have been exposed to the malaria of the terai during the unhealthy season.

It is almost impossible to make any estimate of the rate of mortality—I imagine it to be rather high, especially among infants, in the large towns, and low among the rural population, who live in scattered and detached dwellings—the population, there is little doubt, is increasing.

The first recorded epidemic of cholera took place in 1823; in the native history, it is said to have been caused by the influence of Saturn and other planets, "owing to which Mahamai appeared in Nepal, and many persons died from the effects of her evil eye." It appeared first in the East, and spread all over the country, as far as the river Kali, causing great mortality. The disease lasted, in an epidemic form, for two months. The next outbreak mentioned was in 1831; the cause, on this occasion, assigned was that, according to the Gambat era, the year was 1888, and that, to make matters worse, the Raja was in the eighteenth year of his age. Any year in which the number 8 occurs is considered particularly unlucky, so that the calamity was scarcely wondered at.

Epidemics occurred in 1843, 1856, 1862, and 1867. That of 1856 was the most severe; it lasted for several months, and the mortality in Kathmandu was said to have been, for some weeks, 200 to 250 daily.

Records are found, in the office of the Residency Hospital, of a severe epidemic in 1872, and of milder ones in 1874 and 1875; since then, a few cases have occurred every year. There were more than usual in 1882; but, between 1875 and 1885, there has been no severe outbreak. A few deaths, as usual, were reported, both in Patan and Kathmandu, during the hot weather of last year. Very little intercourse with the plains takes place after April 1st; the Nepalese have an almost exaggerated dread of the Terai malaria. There is no doubt that cholera is endemic in the large towns, and appears in an epidemic form every few years.

The summer of 1885 proved, from its commencement, unusually hot; the average maximum temperature, during March, was 4.7°; during April, 1.2°; during May, 2.4°; during June, 4.3°; during July, 2.4°; and during August, 3.8° above the average for the preceding five years. The rainfall during the same months, excepting March and July, considerably exceeded the average. No rain fell on twenty days in May, on thirteen days in June, on seven days in July, and on one day in August; and, on these days, the weather was sultry and oppressive, the atmosphere scarcely disturbed by the lightest breeze.

Cholera first appeared towards the middle of May, in the city of Kathmandu, five or six deaths being reported daily. A large body of troops, about 16,000 or 17,000, were collected in the valley; they had

not been allowed to disperse to their homes for the usual furlough, on account of the possibility of their services being required by the British Government on the north-west frontier. Towards the end of May, the deaths had increased to ten or twelve daily, and some cases had appeared among the troops. A big parade was held on June 1st, after which, acting under advice from the Residency, the Durbar resolved to disperse the men to their homes at once. The rains commenced on the 10th, and, between that day and the 14th, two and a half inches fell. On the 14th, there was a sudden increase in the number of cases, and the total mortality in the city was said to be between fifty and sixty. The disease invaded the Palace, which was at that time inhabited by 300 or 400 people, twenty-five of whom died before evening, chiefly slave-girls and servants. A panic ensued, and the Durbar was quickly emptied of its inmates; the affected and dying were hurried off to Pashpati, a sacred spot on the banks of the Baghmati, and placed in pâtis, or verandahs, on the ghats, to await their end; while those of the household, who had up to that time escaped, were divided amongst the Durbars of Patan and Bhatgaon, and other places in the valley. Several cases subsequently occurred among the scattered parties, which served as fresh centres of the disease.

Nothing could possibly have been more unfortunate for an individual attacked than the treatment he received from those around him. As soon as the symptoms had declared themselves, the patient was hurried off to the ghats on the banks of the Baghmati, and laid in some pâti by its side, often on the bare ground, without any bedding or covering of any kind. His friends generally sat by him, sleeping, cooking, and eating their food, until death appeared near, when the moribund would be taken to the edge of the water, and his legs, to the knees, placed in the stream. Occasionally, the watchers becoming impatient, this last ceremony of happy despatch would be hastened, with the object of anticipating the termination of their task. I frequently saw people, still breathing, who had been lying thus partly immersed for perhaps an hour or more. In one case, which had promised well, the patient, a woman, was found in this position, and taken out of the water by H. A. Mahomed Hossein, after she had been in it for that length of time. She lived for three days afterwards, but, unfortunately, died eventually from the effects of the exposure. Some unfortunate wretches, when attacked, were simply brought to the edge of the river, and there abandoned. The dead, in the case of those whose relatives could afford it, were burned on the ghats, in the full view of the sick lying there; but the bodies of the poor and low castes were thrown into the middle of the shallow stream by hundreds, to be pulled again piecemeal to the banks by the dogs, jackals, and vultures, who feasted on them.

The epidemic continued through June with little intermission, the daily mortality in Kathmandu being 50 or 60. On June 29th, after heavy rain had fallen for a week, the maximum temperature in the shade was 96°, and there was an increase in the disease, the deaths reaching 100; that number was reported for a few days. There appeared to be, throughout the epidemic, fewer cases on the days when rain, in any quantity, fell; but a heavy rainfall was always followed by an exacerbation on the next day free from rain.

The first week in July was cooler, and there was a corresponding intermission in the cholera, which soon, however, became as bad as ever, and, during the second and third weeks of the month, it decimated the lower lying quarters of the city; during the last week it rapidly declined, and the daily mortality came down to twenty or thirty. It hung on, gradually decreasing through August, and finally died out early in September.

In the meanwhile, the epidemic had spread to the other towns, all over the valley and through the hills. Cases began to occur about the middle of June in Patan, a large town on the bank of the Baghmati, opposite to Kathmandu and higher up stream, and, in a very short time, the mortality was equally great there. A week or two later, the disease broke out in Bhatgaon, nine miles east of the capital, on a small tributary of the Bagmati, and also up stream as regards Kathmandu. Heavy mortality continued here for some time after the disease had commenced to subside in Kathmandu.

During the first week in July, news was received of cholera at Negakôt, a small town situated in a neighbouring valley to the north-west, twenty-six miles distant from the capital.

The 12,000 Sepoys who were dispersed to their homes early in June on furlough, scattered in all directions except south; very many were attacked, and died on the road, and their head-dresses and accoutrements, the property of the State, were brought into Kathmandu. Judging from hearsay evidence (it must be confessed, not of a very trustworthy character), it seems that cholera broke out in several villages in the hills, consequently on the occurrence of a case or cases among Sepoys who had arrived in the villages from Kathmandu. There is no doubt that the dispersion of the troops was followed by the appearance of the disease simultaneously in several different quarters.

Looking at the course taken by the epidemic, there seems small reason to doubt its spread along lines of intercourse. After Kathmandu, the next place of note attacked was Patan, the nearest large city, and in most direct communication with the locality in which the disease first appeared. Shortly after, the third large town, Bhatgaon, nine miles distant, but connected by a good road, over which there is considerable traffic, was invaded. On this road, midway between the two towns, is a large village called Lenîmi, and I obtained evidence, as reliable as any evidence can be in a country where truth is so carefully economised, of the occurrence of cases here before any were reported from Bhatgaon.

The total mortality in the whole valley is said by the Durbar to have been between 9,000 and 10,000. It is possible that, from certain motives of policy, this number may be an intentionally exaggerated estimate; but there are no means of judging, with any approach to accuracy, to what figure the total loss of life amounted; it must have been very great.

From the commencement of the epidemic, frequent and urgent representations were made to the Durbar from the Residency as to the desirability of erecting some sort of temporary hospitals for the reception and treatment of cholera-cases; they were entirely disregarded, as, indeed, might have been expected. At last, the authorities were induced to give the lower storey of a small house in the city to serve as a dispensary, from which medicines might be issued to all who chose to apply for them: but I failed entirely in obtaining any place into which patients could be admitted and treated continuously. A few were seen in their own homes, and a daily visitation was made from June 21st to August 26th to the ghats by the river, and attempts, tolerated by the Durbar, were made to treat the cases found there. The register shows a total of 909 persons either treated in this manner, or to whom medicines were issued from the dispensary. I regret my inability to give any statistics as to the proportion of recoveries; patients were often moved from one ghat to another, and thus lost sight of. It has been found impossible to trace a great proportion of the cases; a large number, however, seen in the first stage, recovered, and many were attended through all the stages to convalescence. On the whole, I imagine the rate of mortality to have been much higher than that usually observed in epidemics in the plains; the conditions were unfavourable, the grossest superstition, ignorance, and indifference, even among well-to-do people, combined against the sick; they lay, for the most part, exposed to wet and chill at night; and it is not, therefore, surprising that, in an excessive proportion of cases of those who had rallied from collapse, uræmia supervened, and carried off the patients. It was with the greatest difficulty that friends could be induced to give rallying patients any nourishment whatever, some prejudice existing against doing so until several days had elapsed after the cessation of the violent symptoms; and I saw many cases die of pure exhaustion, which might have been saved by a little care and nursing—this, owing to the Durbar's refusal of accommodation, I was not able to afford.

A few cases came under my notice of hæmorrhage from the bowel, following cholera as a complication; and in one of these recovery took place.

A Chinese practitioner, who had taken up his quarters in the upper storey of the house given by the Durbar as a dispensary, exercised some unusual methods of treatment. His favourite proceeding was to stick brass-headed iron needles, three or four inches long, into the limbs of his patients, and leave them *in situ* until they were required for some fresh victim; the object was said to be to induce local inflammation and fever.

It is a subject for congratulation that cholera did not invade the Residency lines. The immunity must be attributed to the superior hygienic conditions which obtain there. The risks of infection were great; the disease was prevalent in hamlets and detached dwellings within a few hundred yards of the lines; and corpses of persons who had died from the disease were sometimes found, thrown into nullahs within a short distance.

The Sepoys of the escort were prevented from visiting the city during the epidemic, as were also the servants and followers belonging to the Residency. No further attempt at quarantine was made. A thoroughfare from Kathmandu to the hills runs through the Residency limits. It would not have been practicable to close this, and traffic went on along it as usual. The passers-by, however, as a rule, held no communication with the lines. On one occasion, a man in the first stage of cholera lay down on this road underneath a tree,

and out of sight, nearly opposite the Quarter Guard, and was not noticed and removed until he had been there for one or two hours.

I regret the meagre nature of this report as regards details of clinical or pathological interest, but hope that the circumstances will be considered sufficient excuse. All that was possible, under such conditions as I have described, was to endeavour to, in some small degree, relieve suffering and save life.

HYDROA.

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The term "hydroa" was used by many of the older authors for various vesicular eruptions—for example, sudamina; but it had fallen into disuse until it was revived, by Bazin, for certain cases of bullous eruption which could not be classed under pemphigus or herpes. Recognising that there were such cases, many French, English, and American dermatologists have taken up the term; while the German school, for the most part, ignore it. Among those by whom it has been adopted, there has been a lack of unanimity, hitherto, as to the limits of its employment; by many, it has been used as a sort of intermediate limbo, into which anomalous bullous eruptions may be placed until we are able to classify them properly. It is in the hope of giving the term a more definite meaning that this paper is written. I will examine, therefore, the eruptions designated by this name, and see how many it is worth while to retain; and, first, I would get rid of Mr. Hutchinson's hydroa for the bullous eruptions occasionally seen during the administration of iodide of potassium. The association is a valuable fact, for the knowledge of which we are indebted to Mr. Hutchinson; but surely a special name is not required to designate it. Bazin set up three varieties—Hydroa vesiculeux, H. vacciniforme, H. bulleux. It is now acknowledged, even by Bazin himself, that hydroa vesiculeux is the disease that Bateman described under the name of herpes iris; the term therefore has no reason for existence. The late Dr. Tilbury Fox, however, in an interesting and very instructive posthumous paper on Hydroa,[1] stated his belief in a residue of cases which could still be brought under the name of hydroa vesiculeux, but for which he would prefer the term hydroa simplex. During the three years that I was associated with him, I saw no cases which he called by that name; and, since his brother, who edited the paper, saw several, but considered them either varieties of acne vulgaris or papular urticaria, I think we must pause before accepting such a doubtful species. Hydroa herpetiforme was another of Tilbury Fox's varieties, of which he relates several cases; he considered them merely an exaggerated form of hydroa vesiculeux, there being no line of demarcation between the extreme conditions, while mixed cases are common. It is to this variety that I would draw special attention, but will first discuss the remaining kinds. Hydroa vacciniforme was originally described by Bazin from a single case, but afterwards he says he saw several.

"It appears after exposure to much wind or to the sun. There may be slight malaise or anorexia, and then the eruption comes out on the uncovered regions, such as the nose, cheeks, wrists, hands, and then other parts, including sometimes the mucosa of the mouth. Red spots first appear, on which rounded vesicles, like those of herpes, spring up. On the second day, distinct umbilication is produced; then the contents become opaque, and they resemble a small-pox or vaccine pustule, each dries up into a crust from the centre toward the circumference, and when the crust falls off, leaves a depressed cicatrix; these scars, when numerous, give the aspect of antecedent small-pox. When the sero-pus is abundant, the crusts are thick and yellow, like impetigo. Successive crops prolong the eruption for months, and recurrences from change of temperature are frequent. Arthritic symptoms often precede the eruption."

Dermatologists have long puzzled over this description, and, with others, I fail to recognise the disease intended to be represented. Tilbury Fox thought it was a variety of hydroa bulleux, in which umbilication occurred earlier and more markedly than usual; separate recognition is, therefore, scarcely made out.

Hydroa bulleux, or, as Fox preferred to call it, H. pruriginosum, is a very rare affection, and is attended, at its development, with intense itching, and sometimes preceded by slight febrile symptoms, followed by the formation of small bullæ, not exceeding the size of a split pea, and commencing as vesicles, without any antecedent lesion; they increase in size, with the contents clear at first, but becoming turbid in a few hours. As the contents become absorbed, slight umbilication is produced, and ultimately the bulla dries up, leaving a thin leafy scale, or, if scratched, a blood-crust, or, where many have coalesced, foliaceous crusts, something like pemphigus foliaceus; when these are thrown off, a hyperæmic, subsequently pigmented, surface is left. The eruption comes out in a succession of almost continuous crops, the bullæ being discrete, or grouped irregularly, but never in circles; it may be partial or general, but with free intervals, affecting even the palms and soles, but more abundantly in some parts than others; thus, in the case alluded to, the back, head and face were only slightly affected, while the front of the trunk and limbs were thickly covered. The eruption may continue for many months, and tends to recur in subsequent years. The only constitutional disturbance is such as may arise from want of rest, and from the constant itching, while the secondary consequences of long continued scratching may result.[2]

But the disease does not always begin with bullæ of the preceding characters; thus, the text-case began with a circinate erythematous eruption, like that described under hydroa herpetiforme;[3] in another, bullæ of the ordinary pemphigus type developed on the feet, and the small bullæ came out subsequently; and, on the other hand, G. Fox, of New York, published a case[4] which began as an herpetiform eruption, and lapsed into a pemphigus. A variety, according to Tilbury Fox, consists of outbreaks of small bullæ, not very distinct, which leave behind small red indurated boutons, with puckerings in towards their centres; the eruption runs a very chronic course, and is intensely pruritic. Tilbury Fox regarded these as the pemphigus pruriginosus of Willan and Bateman, but the bullæ are smaller than those of pemphigus.

Since we shall find the same features of circinate erythema, bullæ on the feet, and the inclination to vesicles on the one hand, and to bullæ on the other, but always with itching, in hydroa herpetiforme, it is certain that the two are closely allied, and probably hydroa bullæ is only a rare phase of hydroa herpetiforme. They are thus all reduced under one head only, which we have now to consider.

Hydroa herpetiforme (Fox) is the pemphigus pruriginosus of Chausit and Hardy, the herpes gestationis of Milton and Bulkeley, the herpes circinatus bullosus of Erasmus Wilson, and the dermatitis herpetiformis of Duhring.[5] It is the most important member of the group, and was originally, as one of its names signifies, supposed to be limited to pregnant women. Thanks to the able papers of Fox, and, more recently of Duhring, dermatologists have begun to realise that this is by no means the case, and I shall bring forward additional proofs of this, by the cases to be presently narrated. Duhring does not appear to recognise that Fox's cases, related under hydroa herpetiforme, are the same as his dermatitis herpetiformis; and I have adhered to Fox's selection, because he was the first to give the disease a comprehensive designation, and because it is evidently so closely allied to hydroa bulleux, that it would be unphilosophical to treat them as separate diseases. As no fewer than eight cases have come under my notice within the last twelve months, the disease is probably not so rare as it has hitherto been considered, cases having been regarded as some variety of herpes, pemphigus, or erythema, according as one or other feature was prominent in any one case. I will relate, first, a typical instance of what would be usually described as a herpes gestationis.

Case I.—Emma H., aged 34, came to the hospital on September 24th, 1885. She was rather thin and pale, but otherwise healthy, except for the eruption. It commenced in 1874, in the third month of her second pregnancy, and continued throughout; three days after her confinement, she had a severe exacerbation, but from that time it began to get well, and was gone in three weeks. The second attack began in the third month of her third pregnancy in 1877; it followed the same course, except that, after the same exacerbation, three days after her confinement, she continued to have attacks, of diminishing severity, every fortnight for three months. The present attack began in the third or fourth week of her fourth pregnancy, about a week ago. The general history of all the attacks

[1] *American Archives of Dermatology*, vol. vi, 1880, p. 16.

[2] The description is taken from the case of a man, aged 32, which I had the opportunity of observing all the time he was under the care of Dr. Tilbury Fox. It is Case vii in his paper.

[3] Sangster and Bruce on a Rare Form of Itching Vesicular Eruption (?) Hydroa Bulleux (*Medical Times and Gazette*, January 5th, 1884).

[4] *Archives of Dermatology*, July, 1878, p. 211.

[5] Dermatitis herpetiformis (*Journal of the American Medical Association*, August 30th, 1884), and several subsequent papers, well worthy of study by those interested in the subject; but as Fox was the first in the field, I hope Duhring will give way as to the name, and secure uniformity in nomenclature.